

APPLICATION NO. 10/772,597

INVENTION: Decisioning rules for turbo and convolutional decoding

INVENTORS: Urbain A. von der Embse

Currently amended ABSTRACT

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ABSTRACT OF THE DISCLOSURE

New and improved a-posteriori decoding probabilities,
10 decisioning metrics, and implementation algorithms for turbo
and convolutional decoding to replace the probabilities and
decisioning metrics currently used in the maximum likelihood ML
and maximum a-posteriori MAP algorithms. A-posteriori
probabilities $p(x|y)$ replace the current ML probabilities $p(y|x)$
15 wherein y is the received symbol and x is the transmitted data
and the MAP a-posteriori probability $p(s',s|y)$ replaces the
current MAP joint probability $p(s',s,y)$ wherein s',s are the
trellis decoding states at $k-1,k$ and y is the observed data set
20 $y(k), k = 1, 2, \dots, N$. This yields a-posteriori probabilities and
decisioning metrics to improve decisioning and bit error rate BER
performance and to provide a new mathematical decoding framework.
Complexity is the same as current implementations.

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